

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application.

LISTING OF CLAIMS:

1. (Currently Amended) A method of modifying a three-dimensional model comprised of three-dimensional data defining bones and a polygon mesh, the method comprising:

reducing a resolution of the polygon mesh; ~~and~~

reducing a number of bones in the three-dimensional model following reducing the resolution of the polygon mesh; and

associating vertices of the polygon mesh having a reduced resolution with bones after the number of bones in the three-dimensional model has been reduced.

2. (Original) The method of claim 1, wherein:

the bones are arranged hierarchically such that a lower-resolution bone branches to a higher-resolution bone; and

reducing the number of bones comprises removing the higher-resolution bone from the three-dimensional model.

3. (Currently Amended) The method of claim 1, wherein:

the bones are arranged hierarchically such that a lower-resolution bone branches down to two or more succeeding bones, each of the succeeding bones having a higher resolution than its predecessor bone; and

reducing the number of bones comprises:

connecting one of the succeeding bones to the lower-resolution bone; and  
removing remaining high-resolution bones.

4. (Original) The method of claim 3, wherein removing the remaining high-resolution bones comprises removing one or more bones that are between the one of the succeeding bones and the lower-resolution bone.

5. (Original) The method of claim 1, wherein reducing the resolution of the polygon mesh comprises combining polygons in the polygon mesh to decrease a number of polygons in the polygon mesh.

6. (Original) The method of claim 1, wherein:  
the three-dimensional model is located a distance from a virtual camera in a three-dimensional space that the three-dimensional model inhabits; and  
reductions in the resolution of the polygon mesh and the number of bones are performed if the three-dimensional model is greater than a predetermined distance from the virtual camera.

7. (Original) The method of claim 1, further comprising:

receiving an instruction to reduce the number of bones in the three-dimensional model;  
wherein, the number of bones is reduced in accordance with the instruction.

8. (Currently Amended) A method of modifying a three-dimensional model comprised of three-dimensional data defining a polygon mesh, the method comprising:

constructing a bones infrastructure for the polygon mesh;  
removing edges of polygons in the polygon mesh to reduce a resolution of the polygon mesh;  
receiving an instruction to reduce a number of bones in the bones infrastructure;  
reducing the number of bones in the bones infrastructure in response to the instruction following reducing the resolution of the polygon mesh; and  
associating vertices of the polygon mesh having a reduced resolution with the bones infrastructure having a reduced number of bones.

9. (Original) The method of claim 8, wherein the bones are arranged hierarchically such that a lower-resolution bone branches to a higher-resolution bone; and

reducing the number of bones comprises removing the higher-resolution bone from the three-dimensional model.

10. (Currently Amended) The method of claim 8, wherein:

the bones are arranged hierarchically such that a lower-resolution bone branches down to two or more succeeding bones, each of the succeeding bones having a higher resolution than a its predecessor bone; and

reducing the number of bones comprises:

connecting one of the succeeding bones to the lower-resolution bone; and  
removing remaining high-resolution bones.

11. (Currently Amended) An article comprising a machine-readable medium which stores executable instructions to modify a three-dimensional model comprised of three-dimensional data defining bones and a polygon mesh, the instructions causing a machine to:

reduce a resolution of the polygon mesh; ~~and~~  
reduce a number of bones in the three-dimensional model following reducing the resolution of the polygon mesh; and  
associate vertices of the polygon mesh having a reduced resolution with bones after the number of bones in the three-dimensional model has been reduced.

12. (Original) The article of claim 11, wherein:

the bones are arranged hierarchically such that a lower-resolution bone branches to a higher-resolution bone; and

reducing the number of bones comprises removing the higher-resolution bone from the three-dimensional model.

13. (Currently Amended) The article of claim 11, wherein:

the bones are arranged hierarchically such that a lower-resolution bone branches down to two or more succeeding bones, each of the succeeding bones having a higher resolution than ~~a its~~ predecessor bone; and

reducing the number of bones comprises:

connecting one of the succeeding bones to the lower-resolution bone; and

removing remaining high-resolution bones.

14. (Original) The article of claim 13, wherein removing the remaining high-resolution bones comprises removing one or more bones that are between the one of the succeeding bones and the lower-resolution bone.

15. (Original) The article of claim 11, wherein reducing the resolution of the polygon mesh comprises combining polygons in the polygon mesh to decrease a number of polygons in the polygon mesh.

16. (Original) The article of claim 11, wherein:

the three-dimensional model is located a distance from a virtual camera in a three-dimensional space that the three-dimensional model inhabits; and

reductions in the resolution of the polygon mesh and the number of bones are performed if the three-dimensional model is greater than a predetermined distance from the virtual camera.

17. (Original) The article of claim 11, further comprising instructions that cause the machine to:

receive an instruction to reduce the number of bones in the three-dimensional model;  
wherein, the number of bones is reduced in accordance with the instruction.

18. (Currently Amended) An article comprising a machine-readable medium that stores executable instructions to modify a three-dimensional model comprised of three-dimensional data defining a polygon mesh, the instructions causing a machine to:

construct a bones infrastructure for the polygon mesh;  
remove edges of polygons in the polygon mesh to reduce a resolution of the polygon mesh;

receive an instruction to reduce a number of bones in the bones infrastructure;  
reduce the number of bones in the bones infrastructure in response to the instruction following reducing the resolution of the polygon mesh; and

associate vertices of the polygon mesh having a reduced resolution with the bones infrastructure having a reduced number of bones.

19. (Original) The article of claim 18, wherein the bones are arranged hierarchically such that a lower-resolution bone branches to a higher-resolution bone; and

reducing the number of bones comprises removing the higher-resolution bone from the three-dimensional model.

20. (Currently Amended) The article of claim 18, wherein:

the bones are arranged hierarchically such that a lower-resolution bone branches down to two or more succeeding bones, each of the succeeding bones having a higher resolution than a its predecessor bone; predecessor; and

reducing the number of bones comprises:

connecting one of the succeeding bones to the lower-resolution bone; and

removing remaining high-resolution bones.

21. (Currently Amended) An apparatus to modify a three-dimensional model comprised of three-dimensional data defining bones and a polygon mesh, the apparatus comprising:

a memory that stores executable instructions; and

a processor that executes the instructions to:

reduce a resolution of the polygon mesh; ~~and~~

reduce a number of bones in the three-dimensional model following reducing the resolution of the polygon mesh; and

associate vertices of the polygon mesh having a reduced resolution with bones  
after the number of bones in the three-dimensional model has been reduced.

22. (Original) The apparatus of claim 21, wherein:

the bones are arranged hierarchically such that a lower-resolution bone branches to a higher-resolution bone; and

reducing the number of bones comprises removing the higher-resolution bone from the three-dimensional model.

23. (Currently Amended) The apparatus of claim 21, wherein:

the bones are arranged hierarchically such that a lower-resolution bone branches down to two or more succeeding bones, each of the succeeding bones having a higher resolution than a its predecessor bone; predecessor; and

reducing the number of bones comprises:

connecting one of the succeeding bones to the lower-resolution bone; and

removing remaining high-resolution bones.

24. (Original) The apparatus of claim 23, wherein removing the remaining high-resolution bones comprises removing one or more bones that are between the one of the succeeding bones and the lower-resolution bone.



25. (Original) The apparatus of claim 21, wherein reducing the resolution of the polygon mesh comprises combining polygons in the polygon mesh to decrease a number of polygons in the polygon mesh.

26. (Original) The apparatus of claim 21, wherein:  
the three-dimensional model is located a distance from a virtual camera in a three-dimensional space that the three-dimensional model inhabits; and  
reductions in the resolution of the polygon mesh and the number of bones are performed if the three-dimensional model is greater than a predetermined distance from the virtual camera.

27. (Original) The apparatus of claim 21, wherein the processor executes instructions to receive an instruction to reduce the number of bones in the three-dimensional model; and  
wherein, the number of bones is reduced in accordance with the instruction.

28. (Currently Amended) An apparatus to modify a three-dimensional model comprised of three-dimensional data defining a polygon mesh, the apparatus comprising:  
a memory that stores executable instructions; and  
a processor that executes the instructions to:  
construct a bones infrastructure for the polygon mesh;  
remove edges of polygons in the polygon mesh to reduce a resolution of the polygon mesh;

receive an instruction to reduce a number of bones in the bones infrastructure;  
reduce the number of bones in the bones infrastructure in response to the  
instruction following reducing the resolution of the polygon mesh; and  
associate vertices of the polygon mesh having a reduced resolution with the bones  
infrastructure having a reduced number of bones.

29. (Original) The apparatus of claim 28, wherein the bones are arranged hierarchically  
such that a lower-resolution bone branches to a higher-resolution bone; and  
reducing the number of bones comprises removing the higher-resolution bone from the  
three-dimensional model.

30. (Currently Amended) The apparatus of claim 28, wherein:  
the bones are arranged hierarchically such that a lower-resolution bone branches down to  
two or more succeeding bones, each of the succeeding bones having a higher[[-]]resolution than  
a its predecessor bone; predecessor; and  
reducing the number of bones comprises:  
connecting one of the succeeding bones to the lower-resolution bone; and  
removing remaining high-resolution bones.